



Nine Eagles™

Distributed by 'robbe

Operating Instructions



SOLO PRO 290
FTR RTF 2.4 GHz

No. NE3516



FUTABA Transmitter Ready, abbreviated to FTR, applies to selected models from the Nine Eagles range. These models' transmitter and receiver work with the FUTABA S-FHSS code, which means that they can also be controlled by FUTABA transmitters which can be operated in S-FHSS mode.

At present these are the following transmitters:

Skysport T4YF 2.4 GHz FHSS M2 1-F4074

Skysport T4YF 2.4 GHz FHSS M1 1-F4074M1

T6J-R2006GS 2.4 GHz FHSS, No. F4100

T-8J - R2008SB 2.4 GHz FHSS/S-FHSS, No. F4108

T18MZ - R7008SB 2.4 GHz FASSTest M2, No. F8073

T18MZ - R7008SB 2.4 GHz FASSTest M1, No. F8073M1

T-14SG-R7008SB 2.4 GHz FASSTest M2, No. F8075

T14SG-R7008SB 2.4 GHz FASSTest M1, No. F8075M1

FX-32-R7008 2.4 GHz FASSTest, No. F8078

Explanation of specialist terms:

Climb and descent ("Throttle / pitch"): This controls the model's climb and descent.

Yaw: The model's movement around the vertical axis; the helicopter rotates to right or left.

Elevator: The model's movement around the lateral axis, forward or reverse flight

Roll: The model's movement around the longitudinal axis, sideways movement to right or left

Mode 1: Function assignment of the control movements relative to the stick movements.

In this case collective pitch / motor speed (throttle) and roll are controlled by the right-hand stick; pitch-axis and tail rotor by the left-hand stick.

Mode 2: Function assignment of the control movements relative to the stick movements.

In this case collective pitch / motor speed (throttle) and tail rotor are controlled by the left-hand stick; pitch-axis and roll by the right-hand stick.

Dual Rate: Switchable travel reduction for control movements.

Binding: Creating the radio link between transmitter and receiver.

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Be sure to read these Safety Notes before you assemble your model. Always keep to the procedures and settings recommended in the instructions.

If you are operating a radio-controlled model aircraft, helicopter, car or boat for the first time, we recommend that you enlist an experienced modeller to help you.

Safety Notes

Radio-controlled models are not toys in the usual sense of the term. Young persons under fourteen years should only be allowed to operate them under the supervision of an adult.

Building and operating these models requires technical expertise, manual skills, a careful attitude and safety-conscious behaviour. Errors, negligence and omissions in building or flying these models can result in serious personal injury and damage to property.

Since the manufacturer and vendor are not in a position to check that your models are built and operated correctly, all we can do is bring these hazards expressly to your attention. We deny all further liability.



Helicopter rotors, and all moving parts generally, constitute a constant injury hazard.

It is essential to avoid touching such parts.



Please bear in mind that motors and speed controllers may become hot when operating.

It is essential to avoid touching such parts.



Do not stand close to the hazard area around rotating parts when an electric motor is connected to the flight battery.

You must also take care to keep all other objects away from moving or rotating parts.



Observe the instructions provided by the battery manufacturer.

Overcharged or incorrectly charged batteries may explode. Take care to maintain correct polarity.

Ensure the equipment is protected from dust, dirt and moisture contamination. Do not subject the system to excessive heat, cold or vibration.

Use the recommended charger only, and charge the batteries only for the prescribed period.

Check your equipment for damage at regular intervals, and replace defective components with genuine spare parts.

Do not re-use any devices which have been damaged in a crash or by water, even when they have dried out again.

Either send the equipment to the robbe Service Department for checking, or replace the parts in question.

Crash or water damage can result in concealed defects which may lead to failure in subsequent use.

Use only those components and accessories which we specifically recommend.



Do not carry out modifications to the radio control system components apart from those described in the instructions.

Operating the model

- Never fly over or towards spectators or other pilots, and maintain a safe distance from them at all times.
- Never endanger people or animals.
- Never fly or run the model close to high-tension overhead cables or residential areas.
- Do not operate your model in the vicinity of canal locks or open water ways.
- Do not operate your model from public roads, motorways, paths and squares etc.; use authorised model flying sites only.
- **Never operate the model in stormy weather.**

Never "point" the transmitter aerial straight at the model when operating it. The transmitter signal is at its weakest in this direction. It is always best to stand with the long side of the aerial angled towards the model.

Insurance

Ground-based models are usually covered by standard personal third-party insurance policies. In order to fly model aircraft you will need to extend the cover of your existing policy, or take out specific insurance.

Check your insurance policy and take out new cover where necessary.

Liability Exclusion

robbe Modellsport is unable to ensure that you observe the assembly and operating instructions, or the conditions and methods used for installing, operating and maintaining the model components.

For this reason we accept no liability for loss, damage or costs which are due to the erroneous use and operation of our products, or are connected with such operation in any way.

Regardless of the legal argument employed, our obligation to pay compensation is limited to the invoice value of those robbe products directly involved in the event in which the damage occurred, unless otherwise prescribed by law. This does not apply if the company is deemed to have unlimited liability according to statutory regulation due to deliberate or gross negligence.

**Set contents:**

- 1 x Scale helicopter, completely factory-assembled and set up, ready to fly
- 1 x Detailed, multi-colour scale fuselage with metal-reinforced tubular ladder frame
- 1 x 3-blade rotor head
- 1 x Brushless motor
- 1 x LiPo battery, 11,1 V 1100 mAh
- 1 x Battery charger with plug-type mains PSU
- 1 x Triple-axis gyro system
- 1 x J6 2.4 GHz 6-channel computer radio control system, pre-programmed
- 1 x Operating instructions



Please be sure to observe the Safety Notes concerning the handling of Lithium-Ion-Polymer batteries (page 11).

Dear customer,

Congratulations on choosing a factory-assembled model helicopter from our range. Many thanks for placing your trust in us.

The model can be completed and prepared for flight very quickly. Please read right through these instructions before attempting to fly the model for the first time, as this will make it much easier to operate the model safely.

All directions, such as “right-hand”, are as seen from the tail of the model, looking forward.

Specification:

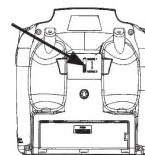
Main rotor diameter:	approx. 450 mm
Tail rotor diameter:	approx. 120 mm
Length:	approx. 456 mm
Height:	approx. 170 mm
All-up weight:	approx. 340 g
RC functions:	Pitch-axis, roll, tail rotor, collective pitch, throttle

Recommended accessories:

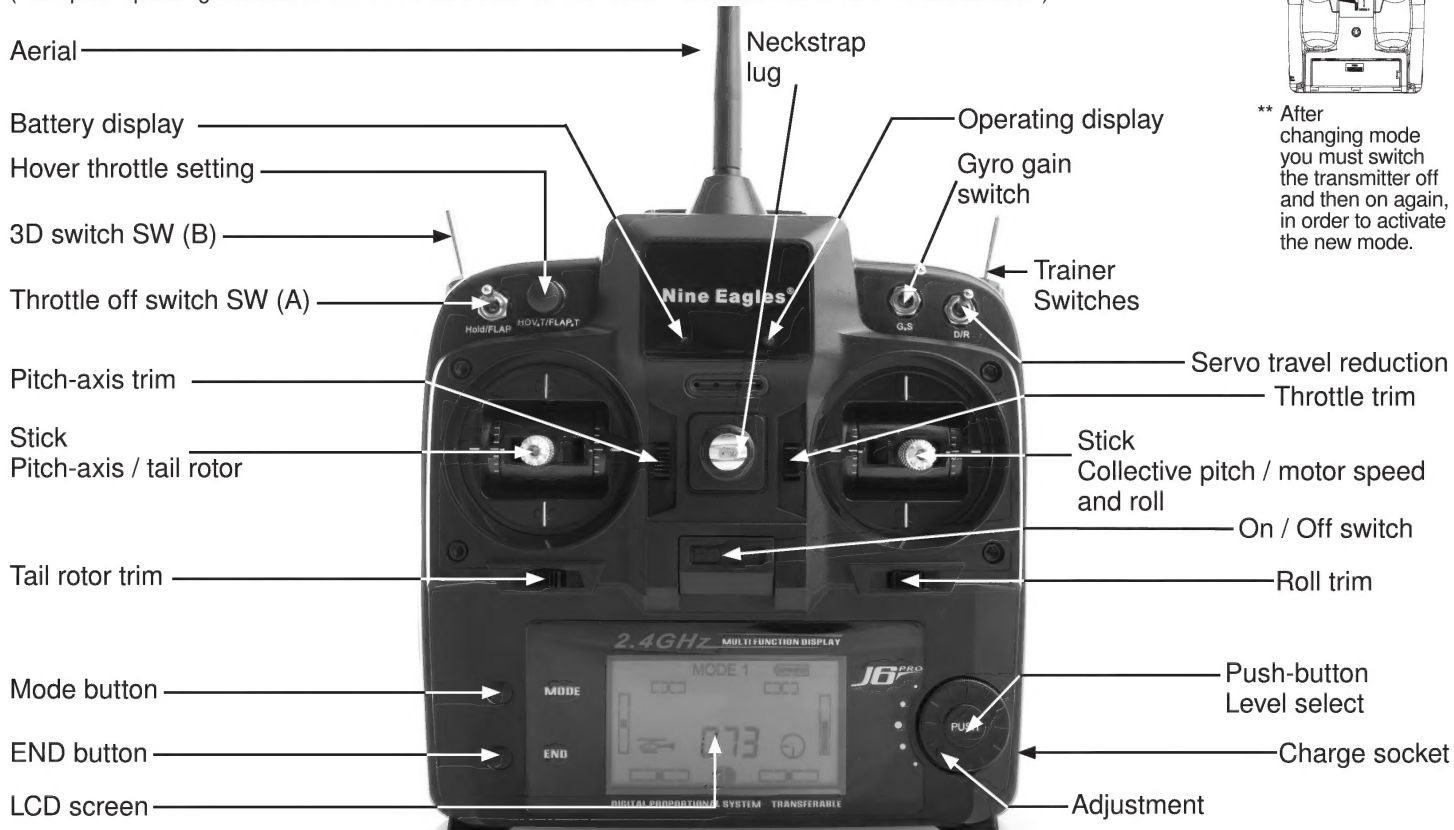
- 8 x 8005 NiMH AA-cell, 1.2 V / 2500 mAh
- 1 x F1415 Transmitter charge lead
- 1 x 8564 POWER PEAK® Uni 7 EQ 230V

Transmitter description* (Mode 1) - The mode select switch is located on the back of the transmitter**

(*Complete operating instructions for the J6 transmitter can be found in the Download area at www.robbe.com)

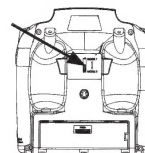


** After changing mode you must switch the transmitter off and then on again, in order to activate the new mode.

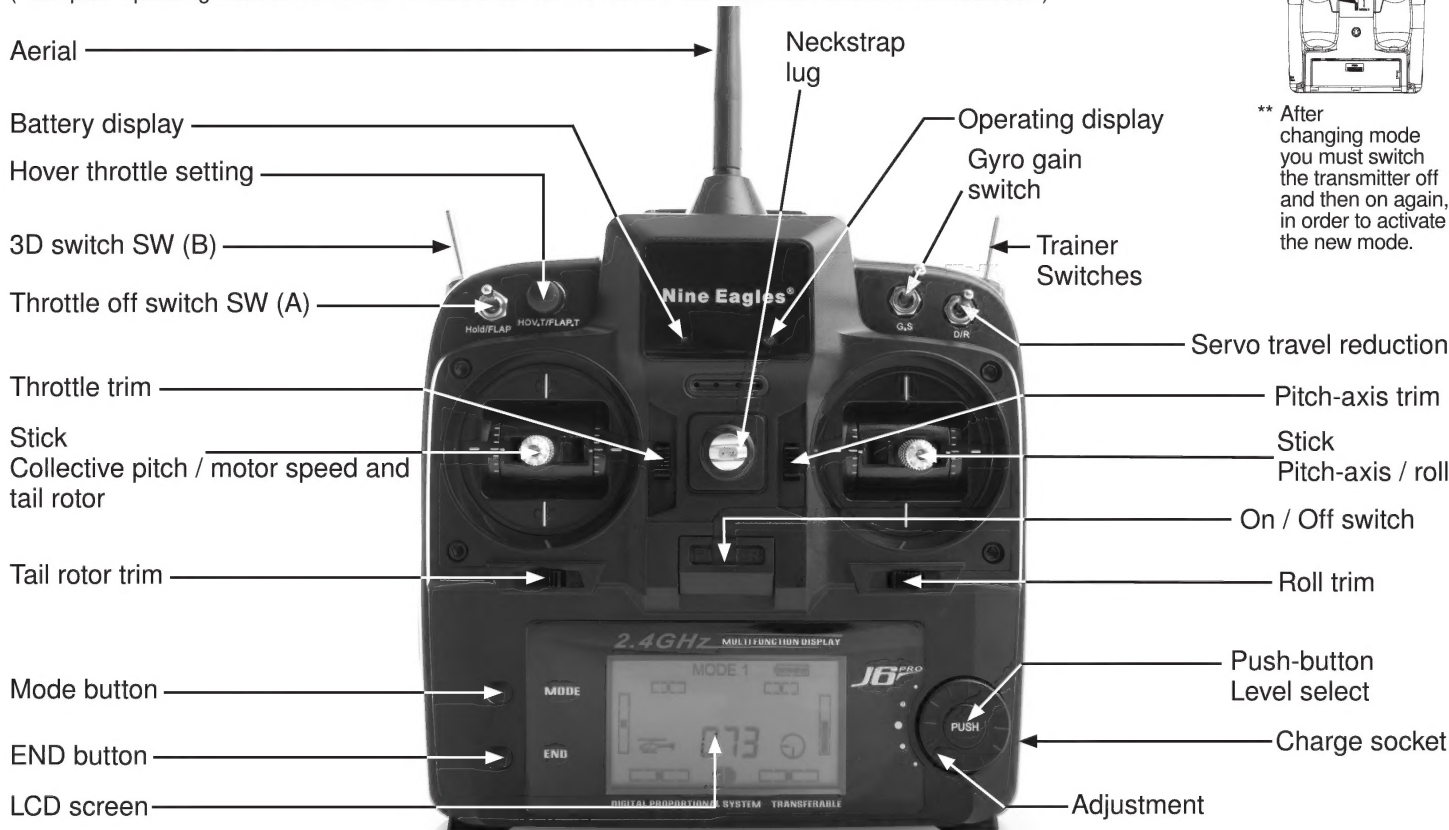


Transmitter description* (Mode 2) - The mode select switch is located on the back of the transmitter**

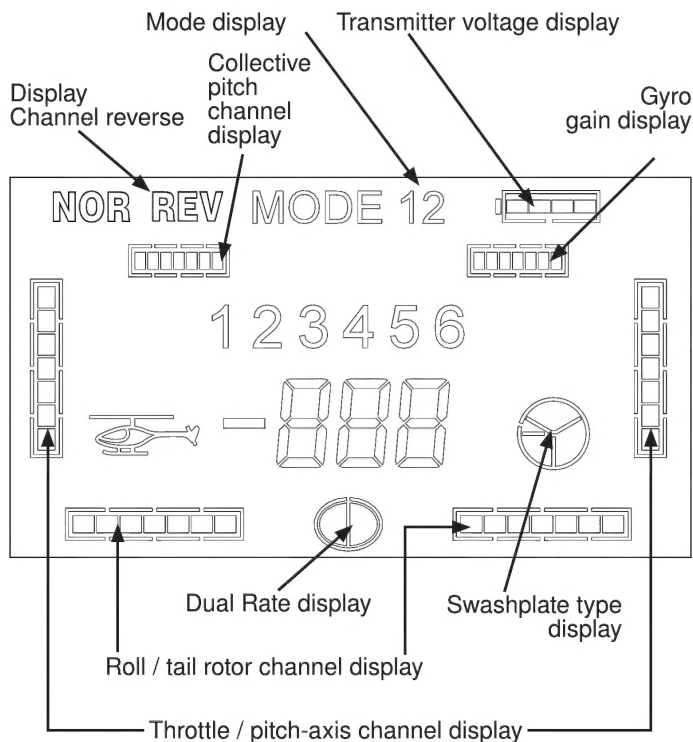
(*Complete operating instructions for the J6 transmitter can be found in the Download area at www.robbe.com)



****** After changing mode you must switch the transmitter off and then on again, in order to activate the new mode.



Transmitter LCD display



Collective pitch and throttle adjustment (default settings)

Normal flight



Stick fully back: Throttle 0%, collective pitch -6°

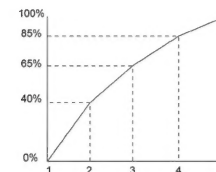


Stick centre position: Throttle 60-65%, collective pitch -2°



Stick fully forward: Throttle 100%, collective pitch +10°

Throttle	Collective pitch
1 100%	10°
2 85%	6°
3 65%	-2°
4 40%	-4°
5 0%	-6°



3D flying



Stick fully forward: Throttle 100%, collective pitch +10°

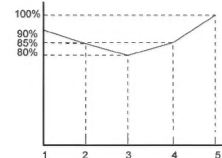


Stick centre position: Throttle 85%, collective pitch +3.5°

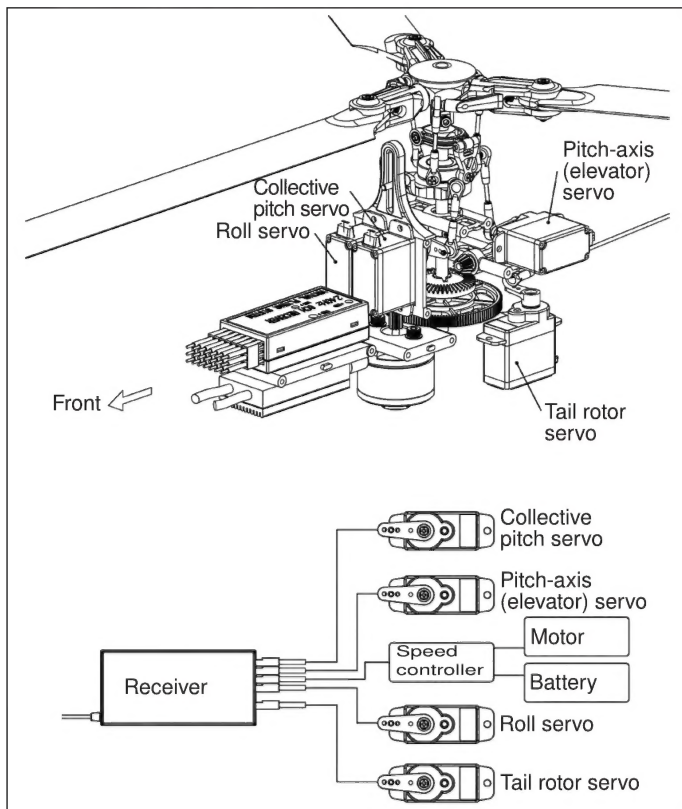


Stick fully forward: Throttle 90%, collective pitch +7.5°

Throttle	Collective pitch
5 100%	10°
4 85%	3.5°
3 80%	1.5°
2 85%	2.2°
1 90%	7.5°



Receiver outputs



Charging the flight battery



Connect the battery charger to the mains PSU, and plug the PSU into a mains socket.

The red monitor LED on the charger lights up, and the charger emits a brief "beep". Connect the battery to the charger.

You will hear a brief "beep"; the green monitor LED flashes during the charge process.

When the charge process is complete, you will hear a further brief "beep", and the green monitor LED on the charger glows constantly. Disconnect the battery from the charger, then disconnect the mains PSU from the wall socket.



Safety Notes

The battery must not be left unsupervised during the charge process or be placed on an inflammable surface. Protect from damp. Do not subject it to direct sunshine, and do not cover the charger.

Do not charge batteries that are hot to the touch. Allow batteries to cool down to ambient temperature. Charge the battery only using the charger included in the set; do not use any other charger. The charger should only be used to charge the battery included in the set. Not suitable for charging the transmitter battery!

**Safety Notes regarding LiPo batteries:**

- Do not place the battery in water or any other liquid.
- Never heat or incinerate the pack, or place it in a microwave oven.
- Avoid short-circuits, and never charge the battery with reversed polarity
- Do not subject the battery to pressure or shock loads, and never distort or throw the pack
- Never solder directly to the battery
- Do not modify or open the battery
- Batteries must only be charged with a suitable charger; never connect the battery directly to a mains power supply.
- Never charge or discharge a battery in bright sunlight, or close to a heater or open fire.
- Do not use the battery in areas subject to high levels of static electricity.
- Any of these errors can result in damage to the battery, explosion or fire.
- Keep the battery out of the reach of children
- If electrolyte should escape, do not expose it to fire, as the material is highly inflammable and may ignite.
- Do not allow fluid electrolyte to come into contact with eyes. If this should happen, flush with copious amounts of water and contact a doctor without delay.
- The fluid electrolyte can also be removed from clothing and other objects by rinsing with copious amounts of water.

LIABILITY EXCLUSION

Since robbe Modellsport is not in a position to monitor the handling of these batteries, we expressly deny all liability and guarantee claims where the batteries have been incorrectly charged, discharged or handled.

Binding the receiver

This function is required in order to create the communication link between receiver and transmitter.



Fig. 1

Note: the 2.4 GHz transmitter and receiver are supplied already bound at the factory. It will only be necessary to bind the system again after a repair, or if you exchange a component. We recommend that you place the transmitter within 0.10 m of the receiver aerial in order to exclude the possibility of interference from other transmitters during the binding process.

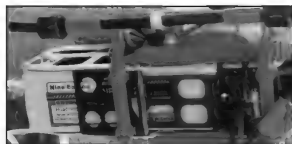


Fig. 2

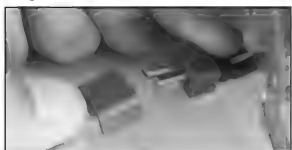


Fig. 3

Procedure:

1. Disconnect the electric motor from the speed controller.
2. Switch the transmitter on (Fig. 1).
3. Install the flight battery (Fig. 2) and connect the receiver: the monitor LED flashes (Fig. 3).
4. Hold the Binding button pressed in for about three seconds: the monitor LED flashes.
5. The receiver is ready for use as soon as the LED glows constantly.

Pre-flight safety check

Before flying the model check that the receiver battery is fully charged, and that the transmitter batteries still have adequate capacity.

Ensure that the throttle stick is at the lowest position (fully back) before switching the model on, and that all other sticks and switches are in the normal position.

Check that all servos are working perfectly.

Check that each component has been installed correctly.

Check that the whole model is in perfect technical condition.

When it is time to switch the receiver and transmitter on, please observe the following procedure:

Please always switch the transmitter on first, and only then the receiver.

After the flight always switch the receiver off first, and only then the transmitter. If you fail to keep to this sequence, the model could fly off out of control.

Check that all linkages are correctly fitted and devoid of lost motion; replace them if necessary. Sloppy linkages result in instability in flight.

Before flying the model, check that the connection between flight battery and model is secure. Vibration can cause loose connectors to come adrift in flight, rendering the model uncontrollable.



Flight preparation

Open the battery compartment and insert the dry or rechargeable cells. Close the battery compartment. Move all the switches to the forward position, then switch the transmitter on (Fig. 1). If switches "A" or "B" are in the "ON" position, the screen flashes and the transmitter emits a beep to alert you. The transmitter cannot be switched off with the switches in these positions.

Move the collective pitch / throttle stick and trim to their lowest position. Otherwise the motors will not start.

Open the battery frame cover. Fit the charged LiPo flight battery as far as it will go into the support frame on the helicopter. Lock the cover again, then connect the LiPo flight battery (Figs. 2 and 3). Take care not to touch the throttle control. Leave the model motionless for a minimum of three seconds, otherwise the initialisation process will not take place.

Repeat this procedure every time you wish to fly the model.

The "3D" aerobatic switch SW(B) should only be operated by experienced pilots. Moving the switch to the "ON" position sets a system rotational speed suitable for aerobatics.

The hover rotor speed can be adjusted using the "Hover throttle setting" rotary knob.



Fig. 1



Fig. 2



Fig. 3

Flight preparation

Check the correct position of the swashplate before the first flight. The swashplate must sit exactly horizontal when viewed from the side and front of the model. Position the model on a totally flat surface. Now move the throttle stick to the lowest throttle position, and switch the transmitter on. Check that the pitch-axis, roll and tail rotor trim are all in the neutral positions. Now connect the flight battery.

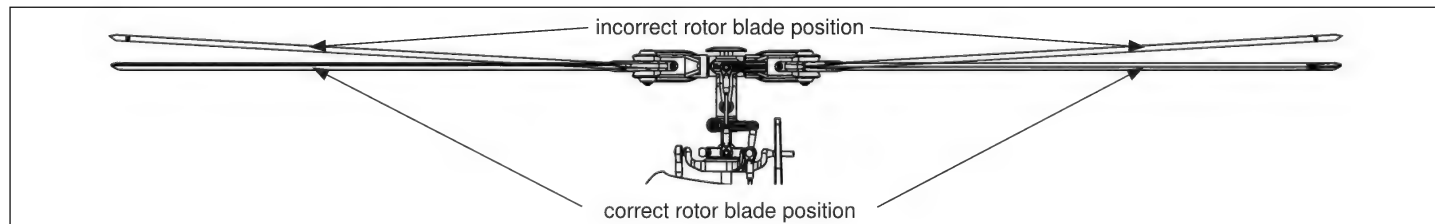
Remove the canopy and check the swashplate alignment. If it is not horizontal, you must correct it manually. Remove the battery and turn the transmitter off.. Disconnect the appropriate ball-link. You can adjust the pushrod length by turning the ball-link clockwise or anti-clockwise. Re-connect the ball-link. Repeat this step until the swashplate is correctly positioned on the model.

Fine trimming is carried out at the transmitter during test-flying.

Check the main rotor blade attachment. The blades must be able to swivel smoothly, without jamming. They should not be too loose, otherwise vibration may occur.

Blade tracking adjustment:

It is important to check blade tracking the first time you operate the model: cautiously open the throttle, and check the blade tracking with the rotor spinning. If one blade is higher than the other at hover speed, you must either raise the pitch angle of the lower blade, or reduce the pitch of the higher blade. (The exact pitch angles are set on the main rotor linkage.)



Important Notes

Take-off: use the 3D switch for aerobatics only. To take off, slowly and steadily increase rotor speed until the model is hovering approximately at eye-level. At the same time adjust the trims until the helicopter is flying stably and hovering over one point. At low height (approx. 10 - 15 cm above the ground) the model cannot be trimmed accurately due to the turbulence generated by the rotor.

Landing: slowly and steadily reduce the throttle setting until the model descends and touches down. Never reduce the throttle setting abruptly.

After the landing disconnect the flight battery from the receiver, and only then switch the transmitter off.

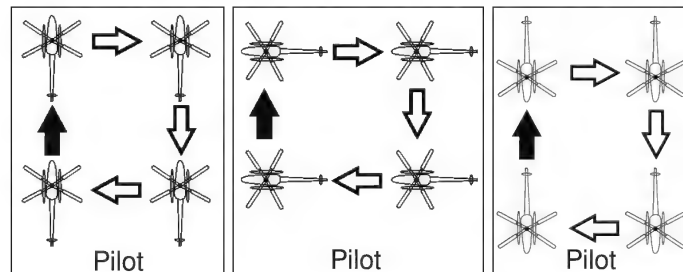
Caution: Stopping (obstructing) the rotor blades when they are turning can cause serious damage to the mechanical system, and may even result in a fire. If the propeller is forcibly stopped, immediately move the throttle stick back to Idle!

Note regarding the flight battery: as soon as you notice a reduction in motor power, land immediately and disconnect the battery. Never continue flying until the battery is flat, as this causes a deep-discharge condition which results in permanent damage. Allow the battery to cool down before recharging it.

Replacing the rotor blades: If a rotor blade is damaged, replace it immediately. When fitting the new rotor blade, tighten the retaining screw just to the point where the blade still swivels smoothly.

The first few flights

Ideally the first flight should take place in a large indoor space devoid of obstructions. If you have to fly the model in the open air, wait for a day with **totally flat calm conditions**. We recommend that you ask an experienced helicopter pilot to help you during the first few flights.



Once the model is properly trimmed, you can practise hovering, and carry out manoeuvres such as circles, squares, rectangles and figures-of-eight. Initially it is always best to stand about two metres away from the model, behind or at right-angles to it; this avoids giving incorrect control commands. You can fly a square pattern by alternating the direction of flight: away from the pilot, to the pilot's right, and then towards the pilot again.

Important: Check the state of charge of the transmitter batteries before each flight, and recharge them when necessary. It is essential to charge the flight battery before flying the model.

Tip: when the helicopter is flying with the nose pointing towards you, the controls are reversed (apart from the throttle control).

Neutral settings for tail rotor and gyro

If you wish to adjust Heading Lock mode on the transmitter, move the RVMX switch (3-D switch) to the forward position (switched off), and the G.S. switch (gyro gain switch) to the back position. Gyro gain should be set to about 70%. Check the neutral position of the tail rotor linkage after making adjustments at the transmitter. Connect the battery to the helicopter without moving the transmitter's tail rotor stick or the helicopter. Wait three seconds. The output arm of the tail rotor servo should now be at an angle of 90° to the servo (Fig.1). At the neutral position the tail rotor linkage should be at the centre of the tail rotor shaft (Fig. 2).

Adjust the tail rotor pushrod if necessary (see the illustration of the tail rotor neutral position).

When you move the tail rotor anti-clockwise, the tail rotor servo must compensate in the clockwise direction. If this is not the case, switch the gyro to "Reverse" (Fig. 3).

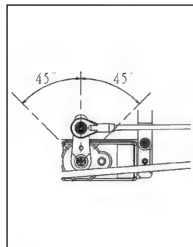


Fig. 1

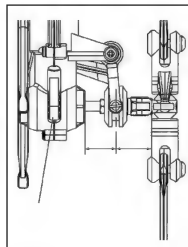


Fig. 2

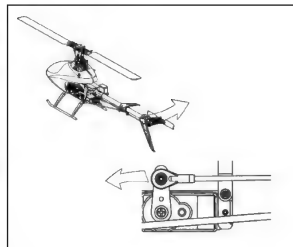


Fig. 3

Possible problems and their remedies

Check that the battery in the helicopter is the correct type, and that it is fully charged.

Check the collective pitch setting.

Check that the main rotor blades are free to swivel.

Check the main and tail rotors for possible vibration.

Check that the gears mesh together correctly.

Check the tail rotor drive shaft.

Transmitter settings

Channel	Adjustment	Curve data					Dual Rate	
		1	2	3	4	5	low	high
CH1	NOR	-15E					80	100
CH2	NOR	-15E						
CH3	NOR	0	55	75	85	100		
CH4	NOR	0E						
CH5	NOR	Gain (20-25)						
CH6	Normal	45	50	55	62	70		
	3D	25	39	52	63	75		

**Causes of problems in flight, and how to eliminate them***

	Cause of problem	Remedy
Blade tracking	Rotor blades running at different heights – Model constantly vibrates	Correct tracking by adjusting main rotor pushrods adjust
Hover setting	Main rotor speed too low	Reduce hover collective pitch to about 5°, (main rotor speed should be around 2,200 rpm). Raise throttle curve
	Main rotor speed too high	Adjust main rotor pushrods. (main rotor speed should be around 2,200 rpm) Lower hover throttle curve.
gyro gain	Tail turns to one side, Tail not stable at stick centre position	Check tail rotor linkage neutral position, Increase gyro gain.
	The tail oscillates during the hover hover or in forward flight	Reduce gyro gain.

* If you are unable to eliminate the problems, cease flying and ask your dealer for assistance
or use our Technical Hotline: +49 (0)66 44 / 87-777 hotline@robbe.com

Trim settings Mode 1

Throttle trim:

If the rotor starts to move without the throttle stick being touched, or does not respond to stick movements, you must adjust the throttle trim until the rotor is stationary.



Tail rotor trim:

If the model's nose turns to right or left when it lifts off, adjust the tail rotor trim buttons to correct the rotation until the model maintains a stable heading.



Pitch-axis trim:

If the model flies forward or back when it lifts off, adjust the pitch-axis trim until it hovers over one point.



Roll trim:

If the model moves bodily to left or right when it lifts off, adjust the roll trim until it remains in a stable hover.



Trim settings Mode 2

Throttle trim:

If the rotor starts to move without the throttle stick being touched, or does not respond to stick movements, you must adjust the throttle trim until the rotor is stationary.



Tail rotor trim:

If the model's nose turns to right or left when it lifts off, adjust the tail rotor trim buttons to correct the rotation until the model maintains a stable heading.



Pitch-axis trim:

If the model flies forward or back when it lifts off, adjust the pitch-axis trim until it hovers over one point.



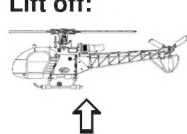
Roll trim:

If the model moves bodily to left or right when it lifts off, adjust the roll trim until the model remains in a stable hover.

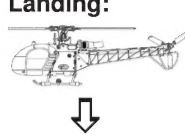


Controlling the model in Mode 1

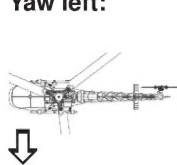
Lift off:



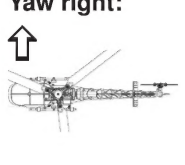
Landing:



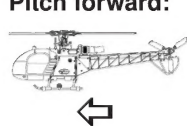
Yaw left:



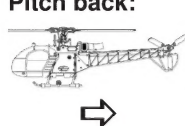
Yaw right:



Pitch forward:



Pitch back:



Roll right:

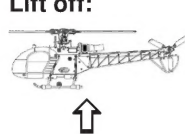


Roll left:

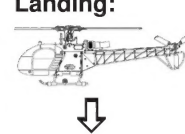


Controlling the model in Mode 2

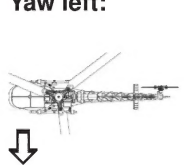
Lift off:



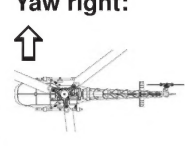
Landing:



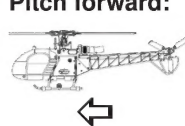
Yaw left:



Yaw right:



Pitch forward:



Pitch back:



Roll right:



Roll left:





robbe Modellsport GmbH & Co.KG hereby declares that this device fulfils the fundamental requirements and other relevant regulations of the appropriate CE directives. The original Conformity Declaration can be found on the Internet at www.robbe.com. Please select the specific device description, then move to "Downloads" and select "Conformity Declaration".



This symbol means that you should dispose of electrical and electronic equipment separately from the household waste when it reaches the end of its useful life. Take your unwanted equipment to your local council collection point or recycling centre. This requirement applies to member countries of the European Union as well as other non-European countries with a separate waste collection system.

Disposal of batteries

Batteries must not be discarded as domestic refuse. To protect the environment, always return exhausted or defective cells to your local recycling centre. These include retail sales outlets for batteries, and communal toxic waste disposal centres. Cover any bare wires with insulating tape in order to avoid short-circuits.

robbe Modellsport GmbH & Co.KG

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Commercial register: Gießen Regional Court HRA 2722
Partner with personal liability:

robbe Modellsport Beteiligungs GmbH Gießen / HRB 5793 Managing Director: Philip Janssen

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